CEE Bankwatch Network

BEYOND FOSSIL FUELS

Cleaning up District Heating

Best technologies and real-life examples

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Introduction

District heating uses a network of underground pipes to deliver hot water from a central production plant to homes and businesses for heating. It is a more efficient and climate-friendly way to heat buildings than individual boilers, as it can use a variety of fuels, including renewable sources such as heat pumps, geothermal, solar thermal, and excess heat which is beneficial for both the climate and air quality. District heating is usually much more efficient because it takes advantage of economies of scale and central planning.

Europe is a world leader in district heating, with around 12% of all households, service and industry sectors connected to a district heating system. The EU has set a target of connecting 40% of households to district heating by 2030.

However, district heating in Europe is still dominated by fossil fuels, with around 32% fueled by fossil gas and 26% by coal and lignite, according to data from the European Commission in 2017[1]. Most of these fossil fuels are used in combined heat and power plants (CHPs) that use the excess heat from electricity production for district heating. While electricity production from CHPs can easily be replaced with solar or wind power operating either on the same site or hundreds of kilometres away, heating solutions need to be local. Further, while renewables are increasingly being used in district heating, a bigger role is played by biomass or waste incineration which are problematic in terms of sustainability and environmental impact. This makes district heating one of Europe's toughest challenges for it to meet its commitments under the UN Paris Climate Agreement. However, with increased ambition in building up new renewable heat sources and improving energy efficiency, the momentum will be there.

1 *https://op.europa.eu/en/publication-detail/-/publication/16710ac3-eac0-11ec-a534-01aa75ed71a1/language-en*

Renewable heat technologies

Industrial heat pumps

Industrial heat pumps are similar to the heat pumps you would find in a house, except much larger and can feed into district heating systems. While their use is not currently widespread, their growth potential is significant as they rely on electricity which is increasingly coming from renewable energy sources such as photovoltaics and wind power. They are much more efficient than fossil fuel boilers, reducing energy consumption and lowering operating costs. They are very versatile and can be scaled to various sizes and can use a variety of renewable heat sources such as geothermal, solar thermal, ambient heat, waste heat from industry, and urban excess heat like sewage water treatment facilities, metros, or data centres. One unique benefit of heat pumps is that they can also be used for district cooling, a practice already implemented in cities like Paris.

Real-life application

In the Simmering district of Vienna, an industrial heat pump has been installed providing heat for 56,000 households. It is operated by the publicly owned WienEnergie which invested 70 million EUR in the first phase of the project. By 2027, it will double in size and ultimately produce 110 MW of heat, scaling up to become the biggest heat pump system t in the world to date. The system uses wastewater from the nearby Ebswien sewage treatment plant. It generates heat to about 90 degrees Celsius and additionally provides the benefit of lowering the temperature of the wastewater returning to the Danube River, mitigating its heating effect on the river[2].

Geothermal

Geothermal energy systems utilise the naturally occurring heat of the Earth to provide heating and sometimes electricity. There are two usual forms, deep and shallow geothermal. The systems will vary depending on the geology of the area they are installed but they are usually either a closed loop heat exchange or open loop system. The distinction between deep and shallow geothermal energy depends on depth, which varies based on geographical conditions. Usually deep geothermal refers to depths more than 2 kilometres below ground.

Shallow

Shallow geothermal, also known as ground source heat, is usually found between 1.5 and 100 metres below ground. It typically requires a heat pump to reach the temperatures that are necessary to be used for heating, but it is more versatile than deep geothermal as it is not as dependent on subsurface heat reservoirs in the way that deep geothermal is. It also typically has lower upfront costs as the exploration activities are not as extensive.

Deep

Deep geothermal, while more challenging in many ways than shallow geothermal, also has significant advantages. For instance, in places that have the viability to use deep geothermal, it can be highly beneficial as it doesn't require the use of an additional heat pump. Furthermore, systems currently utilising high temperatures from

2 https://balkangreenenergynews.com/europes-biggest-heat-pump-system-put-into-operation-in-vienna/

fossil fuels can directly transition to deep geothermal waters if the temperature is sufficiently high, without major renovations to the system which is required for lower temperature systems. However, exploration for geothermal can be a very costly and time-consuming process. Additionally, gases such as methane can be released in the process depending on the geological conditions. Therefore, technologies and practices to capture those gases safely must also be considered when developing deep geothermal.

Real-life application

Munich is home to one of the biggest geothermal district heating systems in Europe. Stadtwerk Munchen has six geothermal plants across the city, with a seventh to be built in 2024. The depth of the wells ranges from 2,000 to 3,000 metres, providing temperatures of up to 120 degrees Celsius. The aim is to cover the entire base load of the district heating with renewables by 2040, the first major city in Germany to do so, with the primary source being deep geothermal. One of the geothermal boreholes is located within the famous Oktoberfest venue, with others operating across Bavaria utilising the favourable conditions of the Molasse Basin[3].

Traunreut geothermal plant, Bavaria, Germany. Source: Equitix

3 *https://www.thinkgeoenergy.com/munich-pushes-ahead-on-further-expansion-of-geothermal-heating/*

Solar thermal

Solar thermal is similar to photovoltaics but instead of producing electricity, it produces heat. Systems typically consist of a solar field and a heat storage tank that feed into a district heating network. The solar field is made up of solar thermal collectors that are installed on rooftops or on the ground. The heat storage tank stores the heat generated by the solar field so that it can be used when the sun is not shining. It is then pumped into district heating systems for heat and hot water. Additionally, solar thermal is usually more efficient than photovoltaics because heat is easier to collect and store than electricity.

Real-life application

Groningen is at the forefront of solar thermal energy in the Netherlands, with the world's fourth-largest solar thermal park under construction. It aims to provide heat for 25% of the city, around 10,000 connected households, and will produce heat from 69 to 93 degrees Celsius year-round. 25 GWh is expected to be produced with a combination of the collector field and a storage tank. It is 48,000 m2 of solar thermal plates on an area of 12 hectares and the storage tank is underground going as deep as 175 metres[4].

Solar park in Midden-Groningen, the Netherlands. Source: GolbeckSolar.com

4 https://solarheateurope.eu/2022/11/30/37-mw-solar-district-heating-plant-in-groningen-netherlands/

Waste heat

Another option is using excess waste heat from industrial processes, commercial buildings, and other sources to provide heat for district heating systems. Recovering this otherwise lost heat offers a very efficient solution. Possible sources of excess heat include data centres, wastewater treatment plants, sewage sludge processing, subway systems, and the production of cooling in grocery stores, hospitals, or hotels. The location of these sources is usually the biggest factor in determining if it's an efficient option for district heating.

Real-life application

In Stockholm, Sweden, 20 data centres in the city are connected to the district heating system, pumping their excess heat into the network, recovering 100 GWh annually. This produces enough heat to warm around 30,000 households. The city's aim is to use excess heat from data centres to warm up 10% of the city, which could be met as the data centres continue to grow. The data centres are paid to provide their heat to the system and benefit from lower electricity tax from the Swedish state, both of which are strong incentives for future data centres. This is one of the biggest and most ambitious data centre heat recovery projects in the world.

Heat Storage

A very important component of many renewable district heating solutions is thermal storage. Storage helps accumulate heat during times of excess production to be used later when the demand is higher than production. This is very complementary for technologies such as solar thermal or when there is a surplus of electricity produced from renewables which can be converted to heat. This also makes it a very flexible response to the variability of renewable electricity production, which improves its financial viability. Heat storage is site-specific, so one solution will not work for all scenarios. The most common forms of storage are underground water tanks, covered pit thermal systems, underground boreholes, or underground aquifer storage.

Real-life application

Colloquially referred to as the 'kettle of Berlin,' is the city's heat storage facility – a 45-metre-high steel tank, the largest of its kind in Europe. It has a capacity of 200 MW, holding 56 million litres of water at a temperature of 98 degrees Celsius. This means it can meet most of the city's hot water needs during the summer. The heat is produced when there is excess wind energy with the potential to integrate heat from other waste heat sources such as the local wastewater treatment facility. The facility cost 50 million EUR[5].

5 *https://apnews.com/article/russia-ukraine-technology-germany-berlin-trending-news-176229c8932869f45e553e615a6e9953*

False solutions

While there are numerous sustainable solutions for district heating, there is still a tendency to rely on conventional technologies which use combustion to produce heat, which we call false solutions. Although several companies or even governments promote them as true alternatives that support the energy transition, in reality, they do not reduce the dependence on limited natural resources and often have environmental and social impacts which are comparable to the use of fossil fuels.

Biomass

Technology

The burning of wood was the first way in which humans produced heat for cooking and warmth. Today, biomass-fired district heating systems burn a variety of biomass products (most commonly biomass pellets) in either heat-only or combined heat and power plants (CHPs).

The use of wood waste and some forest residues can help reduce carbon dioxide emissions only in very specific cases, e.g. when they are used instead of coal or other carbon-intensive fuels. But the choice is rarely between burning coal or wood: there are usually other, more sustainable options available to produce heat or power.

Even when replacing coal, oil or fossil gas, the burning of trees harvested especially for this purpose still increases the amount of carbon in the atmosphere. The assumption on which any definition of biomass as "sustainable" is based is that trees will be re-grown and they will once again capture that carbon. However, not only are forests degrading at an unprecedented speed around the world, but this re-growing of trees can take anything from decades to centuries, leaving dangerous amounts of carbon in the atmosphere in the meantime[6].

There is an increasing body of evidence that documents the negative impact of burning wood on climate targets.[7] A 2021 study published by the Chatham House[8] shows that in 2019, wood pellets imported from the US to the UK were responsible for 13 - 16 million tonnes of CO_2 emissions, taking into account their combustion and the respective supply chain, as well as the uncaptured CO_2 from the atmosphere, and emissions from the decay of roots and residues. If accounted for, they would have increased the emissions from the UK's electricity sector between 22 to 27%.

In addition to their CO_2 emissions, data from Environmental Impact Assessment permit applications and real smokestack tests demonstrate quite clearly that biomass is a heavily polluting technology. Studies[9] conducted more than a decade ago have already found that biomass burners are similar to coal - admittedly better for some pollutants like sulphur and mercury - but the same or worse for particulates and nitrogen oxide.

6 *https://www.euractiv.com/wp-content/uploads/sites/2/2018/01/Letter-of-Scientists-on-Use-of-Forest-Biomass-for-Bioenergy-January-12-2018.pdf*
7 *A comprehensive collection can be found at https://www.biofuelwatch.org.uk/2015/biomass-resources/*
8 *https://www.chathamhouse.org/2021/10/greenhouse-gas-emissions-burning-us-sourced-woody-biomass-eu-and-uk*
9 *https://www.pfpi.net/wp-content/uploads/2011/04/PFPI-air-pollution-and-biomass-April-2011.pdf*

Real-life application

As one of the most widespread types of fuels used today in district heating, after gas and coal, there are dozens of biomass-fired heat or combined heat and power plants across Europe. Several of them serve as examples of why the practice of burning wood for warming homes is unsustainable.

In the process of decarbonising its power and heating sectors, many district heating systems in Finland have been switching from coal or peat to biomass in the last decade. However, as this transition has progressed, several contradictions began to emerge between the stated goals and the observed outcomes. In Inari, a town in the Arctic north of the country where the main economic activity is tourism, a scandal erupted in 2021 when it was revealed that at least some of the hotels in Inari and Saariselkä were being heated by burning trees from a 300-year-old forest.[10] As the district heating operator was unable to identify a sufficient quantity of less problematic biomass, it increased the co-burning of peat, a highly carbon-intensive fuel.

The wood-fueled energy terminal of Laania Oy, Finland.
Credits: Ei polteta tulevaisuutta campaign

10 https://suomenkuvalehti.fi/kotimaa/epareilua-jos-poltosta-tulee-maineriski-matkailulle/

Real-life application

The capital of Germany is following the same path in its attempts to stop using coal for heating. According to Berlin's "decarbonisation roadmap" for the heating network, biomass is set to replace the largest share of coal by 2030. While in 2022, Vattenfall burned 96,000 tonnes of wood at its two combined heat and power plants, the strategy proposes to increase that amount to 1.6 million tonnes each year.

In 2022, 70% of the wood burned in Berlin by Vattenfall was sourced directly from the forest. This included whole trunks from freshly felled trees that were delivered directly to Vattenfall. It is not known how many of the "forest woodchips" supplied were produced from logs.

It is also unclear how Vattenfall will multiply several times the amount of biomass it uses without increasing the burning of whole trunks. The company currently operates short-rotation coppice (SRC) plantations with willows and poplars on 2,060 hectares of land in Brandenburg, Germany and Poland. As the average rainfall in the region is suboptimal for the two cultivated species, low yields mean that a lot of land is needed to produce relatively little energy[11].

Biomethane and biogas

Technology

Biogas is produced by bacteria digesting plant matter in the absence of oxygen. Biomethane is obtained through the purification of the methane in biogas. The plant matter that is used to produce biomethane is usually a byproduct from agriculture (manure or the residues from various crops) or from municipal or industrial services (household waste, wastewater sludge)[12].

As the resulting product is almost identical to fossil gas, it can then be used to produce heat following the same technological process, either in heat-only boilers or in combined heat and power plants. Methane is a particularly potent greenhouse gas. Over 20 years, it has a heating effect of more than 82 times that of carbon dioxide[13] - however, it does not stay in the atmosphere for as long as CO2. But this warming effect is what makes it crucial to avoid methane leakage, which can only be achieved through the constant monitoring of the facility. Furthermore, biogas obtained from silage maize, which currently represents half of the EU's production, does not substantially reduce greenhouse gas emissions when compared to fossil fuels.[14]

One of the measures that the European Commission proposed in the REPowerEU package is to double the current 2030 target for yearly biomethane production to 35 bcm. But a study by ifeu shows that in a "realistic and sustainable case", only 17 bcm of biomethane will be produced in the EU in 2030. Even this number is only possible through an increase of 5 to 6 times the current production levels.

Consequently, achieving the 35 bcm target will only be possible if maize is farmed with the sole purpose of biomethane production to

11 https://www.biofuelwatch.org.uk/2023/vattenfalls-biomasse-berlin/
12 https://www.cleanenergywire.org/factsheets/what-are-best-technologies-heat-homes-cleanly
13 IPCC Sixth Assessment Report (AR6, Table 7.15 at https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_FullReport.pdf)
14 https://theicct.org/wp-content/uploads/2021/12/biomethane-potential-europe-FS-jun2021.pdf

an extreme extent - over 5 million hectares, or about 5% of the arable land in the EU.[15] The main issue with using biomethane for heating, besides its climate impact, is therefore not the technology, but the scale at which it is supposed to be deployed.

Furthermore, not only is biomethane a scarce resource but the demand for it is also set to increase as all sectors of the economy need to rapidly decarbonise, thus likely driving up prices in the future. Several production and industrial processes rely on methane or are hard to electrify. Until the necessary emission-free technologies reach commercial maturity, biomethane will be prioritised in these sectors as long as it is the least polluting and affordable option. It is therefore likely that there will be more competition for biomethane from other sectors.

Hydrogen

Technology

The vast majority of hydrogen produced today comes from fossil gas and coal. An insignificant amount - only 0.04% - was produced in 2021 without the direct use of fossil fuels, through the electrolysis of water, the only technology which can be CO2 emissions-free, if the electricity used for the electrolysis of water (to separate the hydrogen and oxygen atoms) comes from renewable energy.[16]

However, this method of producing hydrogen is expensive and requires large amounts of water, and consequently, the most common type of hydrogen currently used is "grey" hydrogen, which is made using fossil gas and generates CO2 emissions. An alternative to this, heavily promoted by the fossil fuel industry, is so-called "blue" hydrogen, which uses carbon capture and storage (CCS) to reduce emissions. This process is incredibly inefficient because of how energy-intensive it becomes in the attempt to capture carbon and consequently can end up being equally (or more) polluting.

Notwithstanding the climate impacts of producing any type of hydrogen apart from that based fully on renewable energy, the likelihood of hydrogen making sense in the heating sector is minuscule. There are two main reasons for that: the first is efficiency. According to Kevin Kircher, a mechanical engineer at Purdue University in the US who specialises in buildings – "it takes 4 to 5 times more clean energy to heat a home with green hydrogen than to run a heat pump".[17]

The second reason is that demand for hydrogen is expected to be much higher in other sectors which do not have as many alternatives for decarbonisation as heating. Steel and fertiliser production, already among the most carbon- and energy-intensive industries in Europe, plan to heavily rely on hydrogen in the upcoming years.

The risk that comes with betting on hydrogen for heating is therefore double. From an economic point of view, entire towns could be stuck with an expensive system. A reliance by many sectors competing for scarcely available hydrogen will risk even higher prices. It would also pose a challenge from a climate point of view, as it could lead to more polluting forms of hydrogen being used as a fuel.

Consequently, many decision-makers conclude that hydrogen will not play a role in the greening of commercial and residential heating. This was also recently outlined in the National Hydrogen Strategy published by the government of Ireland, which states, "Energy efficiency, direct electrification using heat pumps and the roll-out of district heating are expected to be more efficient and cost-effective solutions for this sector."[18] A meta-study looking at 32 independent

15 https://www.ifeu.de/fileadmin/uploads/ifeu_ECF_biomethane_EU_final_01.pdf
16 https://www.iea.org/reports/global-hydrogen-review-2022
17 https://www.cleanenergywire.org/factsheets/what-are-best-technologies-heat-homes-cleanly
18 https://www.gov.ie/en/publication/624ab-national-hydrogen-strategy/#, p. 37

papers found that none of them suggested a major role for hydrogen in heating.[19]

Real-life application

Currently, there are no commercial applications of hydrogen in district heating in Europe. In heating, hydrogen is primarily proposed as an option for individual home boilers, and not district heating.

H100 is a pilot project initially estimated to cost 32 million GBP to supply 300 homes in Scotland with hydrogen for heating and cooking. However, this is not a district heating project - instead, each participating home would have an individual hydrogen boiler installed.

The project hit several hurdles and it was consequently delayed, including the construction of a "demonstration facility". The recruitment of the necessary number of participants similarly took longer than planned.[20] In early 2023, one of the companies implementing the projects refused to publish information on the results of simulated kitchen explosions, arguing that this could "damage participation", "undermine funding", and threaten the "continued viability" of the project.[21]

Another proposed pilot project to replace domestic gas supply with hydrogen in Redcar, England, was cancelled in December 2023 after it was unable to secure the necessary green hydrogen production facilities. The other location initially considered for the pilot, Ellesmere Port, was dropped after residents objected. Both communities have organised protests against the project, concerned with safety and costs.[22]

Among Vienna's efforts to phase out gas, which include investing over 1 billion EUR in geothermal energy, large heat pumps and the expansion of photovoltaics and wind power,[23] is also the 2022 conversion of the gas turbine at the Donaustadt power plant to burn 15% hydrogen. However, the first trial run alone, which began in July 2023, cost 10 million EUR.[24]

Waste incineration

Instead of using coal, gas or other fuels, waste heat plants or combined heat and power plants burn waste to heat water. The technology is vastly similar to the one deployed in traditional boilers, as most of the incinerators use a moving grate which allows for a more efficient combustion.

Modern waste incinerators use a variety of technologies to reduce their harmful impacts on the environment and human health, increasing both their fixed and operational costs. The ash which results after the waste incineration is passed by magnets to remove metals; ammonia or urea are injected to neutralise nitrogen oxide;

19 *https://www.sciencedirect.com/science/article/abs/pii/S2542435122004160*
20 *https://www.theguardian.com/environment/2022/sep/20/world-first-hydrogen-project-raises-questions-about-its-role-in-fuelling-future-homes*
21 *https://www.heraldscotland.com/news/23395432.buckhaven-trial-fears-funding-loss-explosion-tests-published/*
22 *https://www.bbc.com/news/articles/c842wzn9g35o*
23 *https://www.thinkgeoenergy.com/wien-energie-pushes-big-investments-into-district-heating/*
24 *https://www.icis.com/explore/resources/news/2023/07/14/10905594/austria-trials-hydrogen-in-combined-cycle-power-plant/*

activated carbon is injected to absorb heavy metals like mercury and cadmium.[25]

The most harmful emissions which result from waste incineration, and which cannot be abated, are those of carbon dioxide. On average, the amount of CO_2 produced is similar to that of coal. In Germany, between 0.7 and 1.2 tonnes are emitted when 1 tonne of waste is incinerated.[26]

The availability of waste for incineration is soon set to decrease. The EU Circular Economy Action Plan from 2020 includes a package of measures that will halve the amount of residual (non-recycled) municipal waste by 2030. These measures focus heavily on improving the separate collection of waste, and they are not only aimed at households but also at businesses and public authorities.[27]

Meanwhile, the Waste Framework Directive introduced a 50% target for "the preparing for re-use and the recycling of waste materials such as at least paper, metal, plastic and glass from households". In 2021, only 49% of municipal waste was recycled, with many member states failing to meet the target.[28] But the targets for recycling increase every 5 years by 5%, aiming for 65% by 2035.[29]

Real-life application

Possibly the most well-known waste incinerator in the world is Amager Bakke or Copenhill in Copenhagen, Denmark, an ostentatious building which is instantly recognisable by the artificial ski slope on top of it.

The project, operated by the semi-public utility Amager Resource Center (ARC), was initially supposed to have an array of impressive features: 20% more heat and electricity and at the same time 50% less air pollution per tonne of waste incinerated, and the possibility to burn biomass in case of waste shortages. Most impressive, however, was the planned cost for the new installation: an eye-watering 534 million EUR.

The municipality of Copenhagen initially refused to grant a loan guarantee in January 2012, following concerns that the large project would signal support for the burning of recyclable materials. However, after six months, the loan was eventually granted, and it was agreed that the plant could not import waste for incineration.

This was changed in 2016, as the plant is too large to run exclusively on locally generated waste, and by 2018 it was already importing 30,000 tonnes of waste from Britain, 15-40% of that being plastic, but also other recyclable materials, such as dry paper and cardboard.[30]

As the increased burning of waste threatens Denmark's climate goals, the country decided to decrease its incineration capacity by 30% over a decade by closing 7 incinerators and simultaneously expanding recycling.[31] As a major carbon emitter threatening Copenhagen's 2025 net-zero target, ARC announced in 2021 that it will deploy carbon capture and storage (CCS) at the facility. However, this plan was dropped in August 2022 because the CCS project was unable to meet the financial criteria required to receive national funding.[32]

25 *https://www.cleanenergywire.org/factsheets/waste-energy-controversial-power-generation-incineration*
26 *https://www.ipcc-nggip.iges.or.jp/public/gp/bgp/5_3_Waste_Incineration.pdf*
27 *https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1583933814386&uri=COM:2020:98:FIN*
28 *https://www.eea.europa.eu/en/analysis/indicators/waste-recycling-in-europe*
29 *https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02008L0098-20180705*
30 *https://zerowasteeurope.eu/2019/11/copenhagen-incineration-plant/*
31 *https://e360.yale.edu/features/in-europe-a-backlash-is-growing-over-incinerating-garbage*
32 *https://energypost.eu/copenhagen-will-miss-its-2025-net-zero-target-a-case-study-of-how-pledges-fail/*

Public funding options

Transforming a district heating system can seem complex at times and does require a significant amount of funding. Yet there are many forms of public financing in Europe intended for this purpose. This can come either from the European Union, European public banks such as the European Investment Bank or the European Bank for Reconstruction and Development, or from national or regional budgets.

European Union Funding Options

Cohesion Fund - supports infrastructure investments focused on energy efficiency and renewables but is only eligible for the following countries: BG, CZ, EE, GR, HR, CY, LV, LT, HU, MA, PL, PT, RO, SL, SK.

Life Programme - funds projects focused specifically on environmental, climate and energy objectives to develop and promote innovative techniques to be a catalyst for large-scale development of solutions.

Horizon Europe - facilitates research and innovation projects that implement EU policies with a global impact.

Modernisation Fund - a programme to support the refurbishment of existing energy infrastructure or acceleration of renewable energy deployment but only eligible for the following countries: BG, CZ, EE, GR, HR, LV, LT, HU, PL, PT, RO, SL, SK.

Just Transition Fund - a specific support scheme for territories identified as just transition regions for the transformation of existing energy infrastructure to renewables.

European Investment Bank (EIB)

The EIB can support municipalities to transform their district heating systems either through direct loans or through technical assistance. This includes the European Local Energy Assistance (ELENA), Joint Assistance to Support Projects in European Regions (JASPERS) and Project Advisory Support Service.

European Bank for Reconstruction and Development (EBRD)

The EBRD can also support municipalities to transform their district heating systems through direct loans or technical assistance. Additionally, there is the Renewable District Energy in the Western Balkans (ReDEWeB) Programme, which is operated by the EBRD and has significantly advanced renewable integration planning in Western Balkan district heating systems. Primarily, it has focused on financing decarbonisation plans and feasibility studies, while also enhancing regulatory frameworks for both public and private investors.

National Budgets

Depending on the country, there are probably already some national funding schemes to support district heating decarbonisation. This will vary from state to state. However, the projects must comply with state aid laws which can also be dependent on the country.

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